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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,589

08/24/2006

Hiroyuki Nabeta

06578/HG

8491

1933 7590 09/21/2007

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EXAMINER

LE, THAO X

ART UNIT

PAPER NUMBER

2814

MAIL DATE

DELIVERY MODE

09/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,589	<b>Applicant(s)</b> NABETA ET AL.	
	<b>Examiner</b> Thao X. Le	<b>Art Unit</b> 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/15/07</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by US 2003/0222268 to Yocom et al.

Regarding claim 1, Yocom discloses a white light emitting diode [0003] in fig. 3 comprising a phosphor layer 32 [0026], to convert blue light into yellow light, provided on a blue light emitting diode 30 [0040], wherein the phosphor layer comprises an inorganic compound containing a phosphor [0047] claim 4.

Regarding claim 2, Yocom discloses the white light emitting diode of claim 1, wherein the inorganic compound is the phosphor [0047].

Regarding claims 3-5, Yocom discloses the white light emitting diode of Claim 1, wherein the inorganic compound comprises a transparent inorganic oxide; wherein the transparent inorganic oxide is an oxide of at least one kind selected from Al, Si, Ti, Ge,

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P, B, Y, Sn, Pb, Gd, Lu, Sc, In, Mg, Ca, Sr and Ba, wherein the transparent inorganic oxide being silica or alumina is prepared, claim 4.

3. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by US 7102152 to Chua et al.

Regarding claim 1, Chua discloses a white light emitting diode in fig. 1 comprising a phosphor layer 116, col. 3 line 13, to convert blue light into yellow light, provided on a blue light emitting diode 102, col. 2 line 55, wherein the phosphor layer comprises an inorganic compound containing a phosphor, col. 3 line 18, abstract.

Regarding claim 2, Chua discloses the white light emitting diode of claim 1, wherein the inorganic compound is the phosphor, col. 3 line 18.

Regarding claims 3-5, Chua discloses the white light emitting diode of Claim 1, wherein the inorganic compound comprises a transparent inorganic oxide; wherein the transparent inorganic oxide is an oxide of at least one kind selected from Al, Si, Ti, Ge, P, B, Y, Sn, Pb, Gd, Lu, Sc, In, Mg, Ca, Sr and Ba, wherein the transparent inorganic oxide being silica or alumina is prepared (silica), col. 3 line 18.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 7102152 to Chua et al. in view of JP 2003327961 to Suzuki et al.

Regarding claim 6, Chua discloses a method of manufacturing a white light emitting diode, abstract, comprising a phosphor layer 116 to convert blue light into yellow light, provided on a blue light emitting diode 102, the method comprising a step of forming the phosphor layer comprising an inorganic compound containing a phosphor, col. 3 line 18.

But Chua does not disclose the method comprising a step of forming the phosphor layer comprising an inorganic compound containing a phosphor via an aerosol deposition method.

However, Suzuki discloses the method of forming an inorganic phosphor compound via liquid phase or a spray pyrolysis (aerosol). At the time the invention was made; it would have been obvious to a person having ordinary skill in the art to use the aerosol method teaching of Suzuki in the method of

manufacturing white light LED of Chua, because it would have provided an inorganic phosphor layer having excellent dispersion stability and emission characteristics as taught by Suzuki, see abstract.

Regarding claim 7-8, Chau discloses the method wherein the compound is being the inorganic compound, col. 3 line 18, wherein the inorganic compound comprising a transparent inorganic oxide is prepared, wherein an oxide of at least one kind selected from Al, Si, Ti, Ge, P, B, Y, Sn, Pb, Gd, Lu, Sc, In, Mg, Ca, Sr and Ba as the transparent inorganic oxide is prepared, wherein the transparent inorganic oxide being silica or alumina is prepared (silica), col. 3 line 18.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X. Le whose telephone number is (571) 272-1708. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on (571) 272 -1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

19 Sept. 2007

/Thao X Le/  
Primary Examiner, Art Unit 2814